

इंटरनेट

मानक

### Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 10810-0 (1984): Method of test for cables, Part 0:  
General [ETD 9: Power Cables]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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*Indian Standard*  
**METHODS OF TEST FOR CABLES**  
**PART 0 GENERAL**

**0. Foreword**

**0.1** A large number of Indian Standards have been published covering the requirements of electric cables. In order to avoid repetition and to bring uniformity, this standard has been brought out to consolidate methods for various tests at one place.

**0.2** This standard is being issued in different parts, each part dealing with a particular test, in detail. The idea is that, besides the consolidation of details at one place, the option should be open to the users of different standards to procure whatever parts are relevant to their activities.

**0.3** The format and main clauses, as listed below, have been kept the same in all parts (except part 0 'General') for the sake of uniformity and to avoid the possibility of missing any details:

1. Scope
2. Significance
3. Terminology
4. Apparatus
5. Material
6. Test specimen
7. Conditioning
8. Procedure
9. Tabulation of observations
10. Calculation
11. Report

If any clause is not applicable in a particular case, it is indicated accordingly.

**0.4** A list of various tests covered in individual parts constituting this standard is given in Appendix A for reference purposes. Whenever other tests are identified, their methods will be covered in subsequent parts.

**0.5** In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS : 2-1960 'Rules for rounding off numerical values (revised)'.

**1. Scope** — This standard, issued in different parts, prescribes methods of tests for electric cables, wires and cords in finished stage as well as their components, such as conductor, insulation, sheath and armour.

**2. Terminology** — In addition to those given in IS : 1885 (Part 32)-1971 'Electrotechnical vocabulary : Part 32 Cables, conductors and accessories for electrical supply', the following definitions shall apply. Additional definitions, wherever applicable, are given in individual parts.

**2.1 Routine Tests** — Tests made by the manufacturer on all finished cable lengths to demonstrate the integrity of the cable.

**2.2 Type Tests** — Tests required to be made before supply on a general commercial basis a type of cable in order to demonstrate satisfactory performance characteristics to meet the intended application.

**Note** — These tests are of such a nature that after they have been made they need not be repeated unless changes are made in the cable materials or design which might change the performance characteristics.

Adopted 14 March 1984

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## **IS : 10810 ( Part 0 ) - 1984**

**2.3 Acceptance Tests** — Tests carried out on samples taken from a lot for the purpose of acceptance of the lot.

**2.4 Median Value** — When several test results have been obtained and ordered in an increasing or decreasing succession, the median value is the middle value if the number of available values is odd, and is the mean of the two middle values if the number is even.

### **3. General Notes on Tests**

**3.1** These methods of tests have been, primarily laid down for electric cables. However, these methods may also be used, with or without modification, for testing other types of cables ( such as, telecommunication cables ), cable joints and terminations, if referred to in the individual product specification.

**3.2** Full test conditions ( such as temperatures, durations, voltages ) and full test requirements are not specified in this standard. It is intended to specify such details in the standard dealing with the relevant type of cable or its component.

**3.3** The details given in this standard may be modified by the relevant product standard to suit the needs of a particular type of cable. In case of any deviation between this standard and the individual product standard, the provisions of latter shall apply.

**3.4** For multi-core cables and cords, not more than 5 cores ( of different colours, if any ) shall be tested, unless otherwise specified in the individual part of this standard or relevant Indian Standard on cables.

**3.5** Unless otherwise specified, tests shall be made at ambient temperature.

**3.6** When a number of tests are performed on one cable, the format for report may be suitably modified to include all the tests in such a way that the basic information required in accordance with this standard is not missed.

## **APPENDIX A**

**( Clause 0.4 )**

### **LIST OF METHODS OF TEST FOR CABLES**

<i>Test</i>	<i>Part Number of IS : 10810</i>
Annealing Test for Wires Used as Conductors	1
Tensile Test for Aluminium Wires	2
Wrapping Test for Aluminium Wires	3
Persulphate Test of Conductor	4
Conductor Resistance Test	5
Thickness of Thermoplastic and Elastomeric Insulation and Sheath	6
Tensile Strength and Elongation at Break of Thermoplastic and Elastomeric Insulation and Sheath	7
Breaking Strength and Elongation at Break for Impregnated Paper Insulation	8
Tear Resistance for Paper Insulation	9
Loss of Mass Test	10
Thermal Ageing in Air	11
Shrinkage Test	12
Ozone Resistance Test	13
Heat Shock Test	14
Hot Deformation Test	15
Accelerated Ageing Test by Oxygen Pressure Method ( <i>under preparation</i> )	16

<b>Test</b>	<b>Part Number</b>
Tear Resistance Test for Heavy Duty Sheath ( <i>under preparation</i> )	17
Colour Fastness to Daylight	18
Bleeding and Blooming Test	19
Cold Bend Test	20
Cold Impact Test	21
Vicat Softening Point	22
Melt Flow Index	23
Water Soluble Impurities Test of Insulating Paper	24
Conductivity of Water Extract Test of Insulating Paper	25
pH value of Water Extract Test of Insulating Paper	26
Ash Content Test of Insulating Paper	27
Water Absorption Test ( Electrical )	28
Environmental Stress Cracking Test	29
Hot Set Test	30
Oil Resistance Test	31
Carbon Content Test for Polyethylene	32
Water Absorption Test ( Gravimetric )	33
Measurement of Thickness of Metallic Sheath	34
Determination of Tin in Lead Alloy for Sheathing	35
Dimensions of Armouring Material	36
Tensile Strength and Elongation at Break of Armouring Materials	37
Torsion Test on Galvanized Steel Wires for Armouring	38
Winding Test on Galvanized Steel Strips for Armouring	39
Uniformity of Zinc Coating on Steel Armour	40
Mass of Zinc Coating on Steel Armour	41
Resistivity Test of Armour Wires and Strips and Conductance Test of Armour ( Wires/Strips )	42
Insulation Resistance Test	43
Spark Test	44
High Voltage Test	45
Partial Discharge Test	46
Impulse Test	47
Dielectric Power Factor Test	48
Heating Cycle Test	49
Bending Test	50
Dripping Test	51
Drainage Test	52
Flammability Test	53
Static Flexibility Test	54